SECRET

MEMORANDUM FOR THE RECORD

SUBJECT: A Program to Calculate Supply and Take-Up Wraps on a Light Table

25X1

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1. Program CTCH evaluates two parallel formulas developed by ☐ that describe the change in a radius of a supply and take-up spool of film mounted on the ends of a light table.

2. The program requires the following information to be given externally for the computations:

   a. Displacement of spool arm center to side of table

   b. Displacement of spool arm center below table surface

   c. Radius of roller at edge of light surface

   d. Film length between tangential points of edge of light surface

   e. Thicknesses of film to be used in computation

   f. Length of film for calculation

   g. Radius of spool core (program assumes that supply and take-up cores are of same radius)

3. Each piece of information is entered on a separate data card. The program is stored on a drum in the UNIVAC 494 computer and is called by a control card. Below are examples of the required cards.
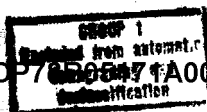
CARD 1.
Blank

CARD 2.
Column NO.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 - 80

C T C H , 0 1 2 8 X X X X X X X , 8 blank

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CARD 3.
Column NO.
1 2 3 4 5 6 7 8 9 10 11 - 80
$ $ $ $ $ $ $ $ $ blank

CARD 4.
This card tells the computer the number of lengths of film to use in its computations. This card does not tell the machine the lengths, just the number of lengths. The limit is 5. User may set any number between 1 and 5. The number of lengths chosen is punched into Column 5 of the card.

CARD 5.
This card tells the computer the number of thicknesses of the base material it is to use. Again, the card sets only the NUMBER of thicknesses not the actual thicknesses. The limit is 12. If more than nine thicknesses are chosen, a 1 is punched in Column 4 and 0, 1, or 2 into Column 5. If nine or less thicknesses are used, any number between 1 and 9 is punched into 5 and Column 4 left blank.

CARD 6.
This card sets the number of spool radii to be used in the evaluation. Again, this sets only the NUMBER of radii, not the actual figures. The limit is four radii, and any number between 1 and 4 is punched in Column 5 of this card.

CARD 7.
This card sets the radius of the rollers at the end of the light surface. This facility is required because all light tables do not come with the identical diameter rollers. The radius can range up to 9.9999 inches. The radius is punched in the first six columns of the card. Do not punch 0 if the size is under one inch but definitely punch the decimal point, examples - .625, over one inch 1.0456.

CARD 8
This card specifies the length of the illuminated surface of the table. Length is given in inches. Specification accuracy is four significant figures such as 42.57, if desired. Begin entry in Column 1 and be sure to punch the decimal point.

CARD 9.
This card sets the distance that the film spool center is below the illuminated surface of the table. This data is necessary to the calculation. Limit again is four significant figures and the decimal point must be specified. Begin data in Column 1. Decimal point may go in Column 1 if displacement is less than one inch.

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CARD 10.
This card sets the displacement of the film spool centers to the side of the lighted surface. Specification accuracy is four figures and the decimal point must be given. Begin in Column 1.

CARD 11.
This card sets the increment of film advance. Range may be anywhere from 1 inch to 1000 or any reasonable number. Data limit is four significant figures starting in Column 1 and the decimal point must be specified.

This completes the necessary control cards. The next group of cards will number from one to twelve and are the film thickness cards. Data is limited to four significant figures with the decimal point going into Column 1. The film thickness cards are the first of the actual data cards.

    4. The second batch of cards are the film core radius cards. These will number from one to four. Data is limited to five significant figures with either the first whole inch digit going in Column 1 or a decimal point entering here.

    5. The final data cards are those specifying the length of film being transported from one side to the other. Data is limited to five significant figures. Length is given in FEET. This is the only measurement that is not in inches. REPEAT FILM LENGTH IS SPECIFIED IN FEET.

    6. The final card is described below.

Column NO.
1 2 3 4 5 6 7 8 9 10 11 12 13-80
/ / / / / / / / / / / blank

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